Image Analysis Report

Denoising and Edge Detection Comparison

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Method: Original

Analysis Metrics:

Signal-to-Noise Ratio (SNR):

- Dark Region: 7.74 dB
- Mid Region: 9.53 dB
- Light Region: 16.08 dB

Edge Detection Metrics:

- Sobel Edge Strength: 12.58
- Laplacian Edge Strength: 9.77

Method: Median

Analysis Metrics:

Signal-to-Noise Ratio (SNR):

- Dark Region: 8.44 dB
- Mid Region: 10.22 dB
- Light Region: 18.54 dB

Edge Detection Metrics:

- Sobel Edge Strength: 7.77
- Laplacian Edge Strength: 5.16

Method: Bilateral

Analysis Metrics:

Signal-to-Noise Ratio (SNR):

- Dark Region: 8.68 dB
- Mid Region: 10.90 dB
- Light Region: 19.90 dB

Edge Detection Metrics:

- Sobel Edge Strength: 6.84
- Laplacian Edge Strength: 5.71

Method: Gaussian

Analysis Metrics:

Signal-to-Noise Ratio (SNR):

- Dark Region: 8.37 dB
- Mid Region: 10.27 dB
- Light Region: 18.17 dB

Edge Detection Metrics:

- Sobel Edge Strength: 12.42
- Laplacian Edge Strength: 10.35

Method: FFDNet

Analysis Metrics:

Signal-to-Noise Ratio (SNR):

- Dark Region: 35.28 dB
- Mid Region: 6.41 dB
- Light Region: 9.80 dB

Edge Detection Metrics:

- Sobel Edge Strength: 6.17
- Laplacian Edge Strength: 4.66

Comparative Analysis Summary

Method	SNR Dark	SNR Mid	SNR Light	Edge Sobel	Edge Laplacian
Original	7.74	9.53	16.08	12.58	9.77
Median	8.44	10.22	18.54	7.77	5.16
Bilateral	8.68	10.90	19.90	6.84	5.71
Gaussian	8.37	10.27	18.17	12.42	10.35
FFDNet	35.28	6.41	9.80	6.17	4.66